

# BMP-9 siRNA (h): sc-39756

## BACKGROUND

Bone morphogenetic protein-9 (BMP-9), like other members of the TGF $\beta$  growth factor superfamily, plays an important role in tissue morphogenesis, particularly in bone and connective tissue. Additionally, liver cells such as Hep G2 express receptors to BMP-9, through which it stimulates cell proliferation and regulates blood glucose concentration, an effect not observed in treatment with TGF $\beta$ . These *in vivo* activities appear to be exploitable in novel therapies; research shows that addition of BMP-9 or BMP-9 encoding adenoviral vectors promote bone formation *ex vivo* and in immune deficient animals.

## REFERENCES

1. Song, J.J., et al. 1995. Bone morphogenetic protein-9 binds to liver cells and stimulates proliferation. *Endocrinology* 136: 4293-4297.
2. Majumdar, M.K., et al. 2001. BMP-2 and BMP-9 promotes chondrogenic differentiation of human multipotential mesenchymal cells and overcomes the inhibitory effect of IL-1. *J. Cell. Physiol.* 189: 275-284.
3. Chen, C., et al. 2003. An integrated functional genomics screening program reveals a role for BMP-9 in glucose homeostasis. *Nat. Biotechnol.* 21: 294-301.
4. Dayoub, H., et al. 2003. Human mesenchymal stem cells transduced with recombinant bone morphogenetic protein-9 adenovirus promote osteogenesis in rodents. *Tissue Eng.* 9: 347-356.
5. Li, J.Z., et al. 2003. Osteogenic potential of five different recombinant human bone morphogenetic protein adenoviral vectors in the rat. *Gene Ther.* 10: 1735-1743.

## CHROMOSOMAL LOCATION

Genetic locus: GDF2 (human) mapping to 10q11.22.

## PRODUCT

BMP-9 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see BMP-9 shRNA Plasmid (h): sc-39756-SH and BMP-9 shRNA (h) Lentiviral Particles: sc-39756-V as alternate gene silencing products.

For independent verification of BMP-9 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39756A, sc-39756B and sc-39756C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

BMP-9 siRNA (h) is recommended for the inhibition of BMP-9 expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

BMP-9 (H-3): sc-514211 is recommended as a control antibody for monitoring of BMP-9 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BMP-9 gene expression knockdown using RT-PCR Primer: BMP-9 (h)-PR: sc-39756-PR (20  $\mu$ l, 535 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.